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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/931,615	09/16/1997	TOMOHIRO KAWATA	041464-5018-01	4409

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EXAMINER

LE, HUYEN D

ART UNIT PAPER NUMBER

2646

DATE MAILED: 12/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

08/931,615

Applicant(s)

KAWATA ET AL.

Examiner

HUYEN D. LE

Art Unit

2646

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-9, 14-16 and 20-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-9, 14-16 and 20-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the cylindrical voice coil secured at one end thereof on a center of the elliptical vibrating diaphragm must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 2-9, 14-16, and 20-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sariti (U.S. patent 3,079,472) in view of Nakamura (U.S. patent 4,969,196) and further in view of Lee et al. (GB 2,278,251) or Numa (JP 355118299).

Regarding claims 4-7, 15, 20 and 22-24, Sariti teaches a speaker unit that comprises a diaphragm (52), a cylindrical voice coil (50) on a center of the diaphragm, a rectangular frame (see the housing 48 in figures 1-2 and col. 2, lines 56-58), a magnetic circuit formed by a rectangular top plate (12), a rectangular magnet (33), and a rectangular back plate (14) having an upright pole (24) on its center. As shown in figure 3, the upright pole (24) is formed as a unit with the back plate.

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As shown in figures 1-3, the top plate (12), the magnet (33) and the backplate (14), each has a width (figure 2) that is equal to or narrower than the width of the rectangular frame in its shorter axis. Also, the top plate (12), the magnet (33) and the back plate (14), each has a length (figure 3) that is equal to or shorter than the length of the rectangular frame in its longer axis.

Further, Sariti shows the cylindrical voice coil (50) that has a circular cross section (see the circular openings 16, 34, and 20 in figure 1 and the air gap 30 in figure 2).

Since the magnetic circuit of Sariti is formed in a rectangular shape (col. 2, lines 56-58), the width of each of the top plate, the magnet and the back plate is substantially less than the length of each respective length as claimed. Also, it is obvious that the speaker unit of Sariti can be installed in any space such as a narrow space that is fitted with the width.

Sariti does not specifically teach the diaphragm and the frame that have the elliptical portion as claimed. However, Sariti does not restrict to any shape for the speaker system (col. 2, lines 56-59) and providing an oval or an elliptical speaker is very well known in the art.

Nakamura shows an oval or elliptical speaker (96) in a rectangular frame or a rectangular cover (figures 11, 13).

Therefore, it would have been obvious to one skilled in the art to provide an elliptical shape, as taught by Nakamura, for the speaker of Sariti such as providing an elliptical diaphragm and a frame with an elliptical opening to receive the diaphragm for an alternate choice of providing a desired shape for the speaker.

Sariti in view of Nakamura show the rectangular frame with a through hole and the magnetic gap as claimed in claims 4, 6, 20, and 23 but lack the teaching a magnetic case as

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claimed. However, providing the magnetic case for accommodating or housing the magnetic circuit is very well known in the art.

Lee or Numa shows a magnetic case (111 in Lee and 26 in Numa) with the top plate serving as a cap as claimed.

Therefore, it would have been obvious to one skilled in the art to provide the magnetic case, as taught by Lee or Numa, for covering or housing the magnetic circuit of Sariti in view of Nakamura to reduce the leakage magnetic flux.

In addition, as shown in the drawings and disclosed on page 2, lines 56-58, the rectangular frame (48) presents a rectangular shape. The hole (20) formed in the center of the top plate (12) of Sariti defines a constant and continuous radius when the protrusions (44) of the holder member (32) are received into the slot (22, col. 2, lines 63-65).

As shown in figure 3, the rectangular frame (48) has a stepped interior surface (see the portion of the frame that supports the peripheral edge of the diaphragm in figure 3) and an upper lip (the outer peripheral portion of the frame in figure 3) overhanging beyond the perimeters of the top plate (12), the plate-shaped magnet (33) and the back plate (14).

Regarding claims 2 and 8, Sariti shows the frame structure, the top plate, the magnet and the back plate that are arranged in parallel relation with one another.

Regarding claims 3 and 9, Sariti does not teach that the speaker unit is installed on either side of a television display on a television set. However, the examiner takes the Office Notice that providing a speaker unit to be installed on either side of a television is very well known in the art.

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Therefore, it would have been obvious to one skilled in the art to provide the speaker unit of Sariti to be installed in either side of the television for applying the speaker system to an electronic device.

Regarding claims 14, 16 and 21, Sariti in view of Nakamura do not teach a second magnet as claimed. However, it is very well known in the art to provide a second magnet in the magnetic circuit of the speaker.

Lee or Numa teaches a second plate-shaped magnet in the magnetic circuit as claimed. Therefore, it would have been obvious to one skilled in the art to provide a second magnet, as taught by Lee or Numa in the magnetic circuit of Sariti for reducing the leakage magnetic flux.

Regarding claim 15, as shown in the drawings, the magnetic circuit of Sariti has the same shape as the rectangular frame (col. 2, lines 56-59).

Regarding claims 25-26 and 28-29, Sariti in view of Nakamura include all the limitations as claimed as mentioned above.

Sariti in view of Nakamura do not teach a second magnet as claimed. However, it is very well known in the art to provide a second magnet in the magnetic circuit of the speaker.

Lee or Numa teaches a second plate-shaped magnet as claimed in the magnetic circuit.

Therefore, it would have been obvious to one skilled in the art to provide the second magnet, as taught by Lee or Numa in the magnetic circuit of Sarati for reducing the leakage magnetic flux.

Regarding claim 27, as shown in the drawings, the magnetic circuit of Sariti has the same shape as the rectangular frame (also see col. 2, lines 56-59).

Response to Arguments

4. Applicant's arguments filed 11/03/05 have been fully considered but they are not persuasive.

Responding to the arguments about the newly added limitations of the stepped interior surface and an upper lip in the rectangular frame, the Applicant should note that Sariti does show the rectangular frame (48) having a stepped interior surface (see the portion of the frame that supports the peripheral edge of the diaphragm in figure 3) and an upper lip (the outer peripheral portion of the frame in figure 3) overhanging beyond the perimeters of the top plate (12), the plate-shaped magnet (33) and the back plate (14) as claimed in claims 4, 6, 20, 23, 25 and 28.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUYEN D. LE whose telephone number is (571) 272-7502. The examiner can normally be reached on 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, SINH TRAN can be reached on (571) 272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



HL

November 28, 2005


HUYEN LE
PRIMARY EXAMINER